THE FLORA AND AVIFAUNA OF THE PROPOSED CARNARVON RANGE CONSERVATION PARK, WESTERN AUSTRALIA, INCLUDING THE NEARBY BLUE HILL PASTORAL LEASE

PART 2 - VEGETATION

By DAPHNE CHOULES EDINGER 7 Elvira Street, Palmyra, WA. 6157

SUMMARY

A comprehensive list of the 400 + vascular plants collected and recorded from the Carnarvon Range in August 1998, 1999, 2000 and 2001 is presented – plus 84 sight records of easily recognised common but uncollected plants. An analysis of the floristic composition of the vegetation of this range is given. Brief notes on the physical features, land use and climate of the range area are also provided.

The Carnarvon Range is at the southern limit of several plant species with a more northerly distribution.

METHODS

Because of the large area of the park and there being only one rough track through it, our collecting was necessarily opportunistic as we travelled and more concentrated at camp sites, mainly at rockholes. For location details and place names see Coate and Edinger (Part 1 this publication).

The park comprises five main areas:-

- 1. Miss Fairbairn Hills, low rounded hills of banded ironstone in the southwest.
- 2. Granitoid breakaway areas in the north of laterite.
- 3. The Carnarvon Ranges of Wonyulgunna Sandstone to 900+ metres.
- 4. Lake Kerrylyn, salt and mostly dry in the north-east and surrounds.
- 5. Red sandplain and sandridges to 9m running northeast and southwest.

VEGETATION OF CARNARVON RANGE

McKenzie and Burbidge (1979) have described the vegetation of the proposed park thus:

A. Vegetation of the range is tall open-shrubland of Acacia aneura with Grevillea spinosa and Hakea rhombales. Below the shrubs are scattered areas of hummock grassland (Triodia basedowii). There are scattered, emergent Eucalyptus camaldulensis and Callitris glaucophylla. Many areas of bare rock are present.

- B. In the gullies which contain pools and ephemeral streams, coolibah (Eucalyptus victrix), to 15m form fringing formations, although Callitris glaucophylla is also common and Ficus platypoda is present, especially on steep areas.
- C. Against the base of the southern side of the range are screes and gibbers with a tall shrubland to low woodland of mulga (Acacia aneura) and gidgee (Acacia pruinocarpa) or sometimes low open woodlands of Corymbia deserticola over low shrubs and grasses.

To the south of the range are extensive red sandplains with occasional low dunes.

- D. A low open woodland of corkwood (Hakea lorea) and scattered Acacia species over a hummock grassland of Triodia basedowii covers the plains.
- E. The dunes have a low openwoodland of the sand-dune bloodwood (Corymbia chippendalei) with a scattered shrub layer of acacias and Aluta (formerly Thryptomene) maisonnneuvei over a hummock grassland (Triodia species). The desert grass tree (Xanthorrhoea thorntoni) occurs in patches on the plains and on some low dunes.

Beard (1974a, 1974b, 1976) has mapped the vegetation at 1:1,000,000.

At Good Camp Rockhole, while collecting water in a very dirty green pool, we collected a sample of the green slime and later sent it to Dr Stephen Skinner in Sydney.

He identified it as containing Spirogyra neglecta, a desmid (Pleurotaenium sp.) and two species of Oedogonium. One of these, Oedogonium silvaticum proved to be a new species record for Australia and the other is an undescribed species.

DISCUSSION

A total of 400 species from 60 families (Appendix 1) were recorded for the area of which 4 were new species, 15 were priority species, one a range extension of 300km approximately (Acacia hamersleyensis) and one a first collection for the area (Acacia marramamba).

As stated before, the Carnarvon Range is at the southern limit of several plant species with a more northerly distribution, e.g. Clerodendrum floribundum.

A total number of genera and species of the major families are listed below:

Family	Genera	Species
Amaranthaceae	1	10
Asteraceae	27	44
Chenopodiaceae	9	25
Chloanthaceae	4	9
Euphorbiaceae	4	8
Goodeniaceae	5	27
Malvaceae	5	13
Mimosaceae	I	27
Myoporaceae	1	26
Myrtaceae	7	19
Papilionaceae	14	21
Poaceae	15	27
Proteaceae	2	9

ACKNOWLEDGEMENTS

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APPENDIX 1. LIST OF FLORA.

Location numbers and codes are:

Miss Fairbairn Hills (banded ironstone).

Breakaways (granitoid) laterite.

Carnarvon Range (Wonyulgunna sandstone).

Lake Kerrylyn, salt.

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Stony, quartzite ridge in the nearby abandoned Blue Hill Pastoral Lease. Red, sand plain & ridges.

In Western Australian Herbarium, but not collected by us.

Priority species.

Sight records.

Blue Hill Pastoral Lease (abandoned) Kevin Coate's collection.

Family	Genus	Species	subspecies	Location	Collection	Status
Acanthaceae	Harnieria	kempeana	subsp. muelleri	2		
Adiantaceae	Cheilanthes	lasiophylla		2		
Adiantaceae	Cheilanthes	sieberi	subsp. sieberi	1,2,3		
Aizoaceae	Gunniopsis	sp. nov.		9		
Amaranthaceae	Prilotus	aervoides				
Amaranthaceae	Prilotus	beardii		9		P3
Amaranthaceae	Ptilotus	exaltatus			Sr	
Amaranthaceae	Prilotus	fusiformis			Sr	
Amaranthaceae	Ptilotus	helipteroides	var. helipteroides	_		
Amaranthaceae	Ptilotus	obovatus	var. obovatus	2		
Amaranthaceae	Prilotus	polystachyus	var. polystachyus		Sr	
Amaranthaceae	Prilotus	roei		2		
Amaranthaceae	Prilotus	schwartzii		1,2		
Amaranthaceae	Ptilotus	sp.Blue Hill				
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	subsp. australe	subsp. ramosum	
manglesianus sp.(bud only) glochidiatus bialata glaucifolia ornata linearis	viminale uliginosum bipinnata ciliaris ciliocarpa ?beardii multiflorus	multicaulis puteale pseudevax viscosus tysonii ramosum ?tenuifolia	craspedioides davenportii fitzgibbonii stipitatum rudallii stuartii gregorii dentex canescens
Thysanotus Thysanotus Daucus Trachymene Trachymene Trachymene	Sarcostemma Actinobole Bidens Brachyscome Brachyscome Calocephalus Calotis	Calotis Chrysocephalum Chthonocephalus Chthonocephalus Dielitzia Erymophyllum Gilberta Gnephosis	Helipterum Lawrencella Leucochrysum Leucochrysum Myriocephalus Olearia Othonna Pluchea Podolepis
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Family	Genus	Species	subspecies	Location	Collection	Status
Asteraceae	Podolepis	gardneri		2		
Asteraceae	Podolepis	kendallii		5		
Asteraceae	Podolepis	sp. Carnarvon Range (DIE Nats 33)	ge.	°C		
Asteraceae	Podolepis	sp. GVD(A.S.		, -		
Asteraceae	Rhodanthe	charsleyae		<u> </u>		
Asteraceae	Rhodanthe	floribunda		1,2		
Asteraceae	Rhodanthe	humboldtiana		1		
Asteraceae	Rhodanthe	propinqua		1,2,3		
Asteraceae	Rhodanthe	sterilescens		2		
Asteraceae	Schoenia	ayersii		1		
Asteraceae	Schoenia	cassiniana			Sr	
Asteraceae	Sonchus	oleraceus			Sr	
Asteraceae	Streptoglossa	liatroides		9		
Asteraceae	Taplinia	saxatilis		3		
Asteraceae	Vittadinia	eremaea		3,5		
Asteraceae	Waitzia	acuminata		3		
Boraginaceae	Halgania	gustafsenii	var. compactus	5		
Boraginaceae	Trichodesma	zeylanica			Sr	
Brassicaceae	Lepidinm	aff. pedicellosum				
		(Mary Mia) DE sn		2		
Brassicaceae	Lepidium	oxytrichum		1,3		
Brassicaceae	Lepidium	phlebopetalum		-		
Brassicaceae	Lepidium	platypetalum			KC	
Brassicaceae	Menkea	sphaerocarpa		_		
Brassicaceae	Stenopetalum	anfractum		-		
Caesalpiniaceae	Petalostylis	cassioides		3		
Caesalpiniaceae	Petalostylis	labichioides	:	<u>ئ</u>		
Caesalpiniaceae Caesalpiniaceae	Senna	artemisioides	subsp helmsii	2		
Cacsaipiniaccac	Collina	altellisioides	spp. x stuitii	7'1		

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		var. barnettii var. cordifolia
pleurocarpum symonii tumidifructa holtzei eremica codonocarpa vesicaria saxatile kalpari rhadinostachya tomentosa calyptrata	carnosa(cottony bluebush) convexa georgei prosthecochaeta thesioides triptera villosa	cornishiana eriacantha sp.Blue Hill (DJE Nats 61) cordifolia cordifolia georgei sp.Kumarina(A.A. Mitchell 623) tomentosa ms bracteosa cephalantha
Senna Senna Wahlenbergia Polycarpaea Centrolepis Atriplex Atriplex Chenopodium Dysphania Dysphania Enchylaena Halosarcia	Maireana Maireana Maireana Maireana Maireana Maireana	Sclerolaena Sclerolaena Sclerostegia Dicrastylis Dicrastylis Dicrastylis Dicrastylis Newcastelia
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Family	Genus	Species	subspecies	Location	Collection	Status
Chloanthaceae	Pityrodia Spartothampella	loxocarpa		- C		
Clusiaceae	Hypericum	Japonicum		2,3		
Colchicaceae	Wurmbea	deserticola(juvenile				
		only)& seeds		3		
Convolvulaceae	Bonamia	?erecta		3		
Convolvulaceae	Bonamia	rosea			Sr	
Convolvulaceae	Ipomoea	plebeia		1		
Crassulaceae	Crassula	colorata	var. tuberculata		Sr	
Cupressaceae	Callitris	glaucophylla			Sr	
Cyperaceae	Carex	?inversa		2		
Cyperaceae	Cyperus	centralis		n		
Cyperaceae	Cyperus	rigidellus		9		
Cyperaceae	Cyperus	squarrosus		3		
Cyperaceae	Isolepis	congrua		2,3		
Cyperaceae	Lipocarpha	microcephala		7		
Dasypogonaceae	Lomandra	leucocephala	var. robusta	5		
Droseraceae	Drosera	burmanni		3		
Droseraceae	Drosera	indica		ς,		
Euphorbiaceae	Euphorbia	australis			Sr	
Euphorbiaceae	Euphorbia	boophthona				
		(Gascoyne spurge)		~		
Euphorbiaceae	Euphorbia	drummondii			Sr	
Euphorbiaceae	Euphorbia	tannensis(desert				
		spurge)	var. eremophila	3		
Euphorbiaceae	Monotaxis	luteiflora		3		
Euphorbiaceae	Phyllanthus	lacunellus		3		
Euphorbiaceae	Phyllanthus	maderaspatensis			Sr	
Euphorbiaceae	Poranthera	microphylla		m .		
Frankeniaceae	Frankenia	fecunda		9 '		i
Frankeniaceae	Frankenia	glomerata		9		Ы

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																subsp. browniana																(\$5
sessilis	cygnorum australis	atriplicina	dentata	ramosa	centralis	havilandii	macroplectra	mimuloides	mueckeana	prostrata	stellata	tenuiloba	triodiophila	wilunensis	basedowii	browniana	collaris	parvifolia	spinescens	glabrata	hispida	rosea	racemigera	ramulosus	ephemerus	nodulosus	odontocarpa	(mulga spinach)	sp nov.	trigonocarpa	calcitrapum	(spurred arrowgrass)
Frankenia	Erodium Brunonia	Dampiera	Dampiera	Dampiera	Goodenia	Scaevola	Scaevola	Scaevola	Scaevola	Scaevola	Velleia	Velleia	Velleia	Gyrostemon	Gyrostemon	Gonocarpus	Gonocarpus	Haloragis		Haloragis	Haloragis	Triglochin										
Frankeniaceae	Geraniaceae Goodeniaceae	Goodeniaceae	Goodeniaceae	Goodeniaceae	Goodeniaceae	Goodeniaceae	Goodeniaceae	Goodeniaceae	Gyrostemonaceae	Gyrostemonaceae	Haloragaceae	Haloragaceae	Haloragaceae		Haloragaceae	Haloragaceae	Juncaginaceae															

	Genus	Species	subspecies	Location	Collection	Status
uncaginaceae	Triglochin	nana		3		
	Microcorys	macredieana		5		P3
	Prostanthera	wilkieana			Sr	
	Isostoma	petraea			Sr	
Coranthaceae	Amyema	gibberula		3		
Loranthaceae	Amyema	maidenii			Sr	
Loranthaceae	Amyema	miquelii		Ŋ		
Joranthaceae	Lysiana	murrayi		3		
	Abutilon	amplum		n		
	Abutilon	cryptopetalum		_		
	Abutilon	fraseri		1		
	Abutilon	leucopetalum		3		
	Alyogyne	pinoniana		5		
	Hibiscus	coatesii		3,5		
	Hibiscus	gardneri		2		
	Lawrencia	squamata		9		
	Sida	calyxhymenia			Sr	
	Sida	excedentifolia		2		
	Sida	fibulifera			Sr	
	Sida	spodochroma		5		
Marsileaceae	Marsilea	drummondii(nardoo)	(00)		2	
Mimosaceae	Acacia	abrupta		1,5		
Mimosaceae	Acacia	aneura	var. aneura(mulga)	1,2,3		
Mimosaceae	Acacia	ayersiana		9		
Mimosaceae	Acacia	ayersiana x minyura	ıra	3		
Mimosaceae	Acacia	burkittii		_		
Mimosaceae	Acacia	citrinoviridis		2		
Mimosaceae	Acacia	cuthbertsonii	subsp. cuthbertsonii	3		
Mimosaceae	Acacia	cyperophylla			Sr	
Mimosaceae	Acacia	daviesioides		1,5		

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dictyophleba (whipstick wattle) grasbyi hamersleyensis	jamesiana kempeana ligulata linophylla maitlandii marramamba	melleodora minyura pachyacra prainii pruinocarpa(black gidgee)	rhodophloia tetragonophylla victoriae opposita platypoda aff compacta aff gilesii aff glabra anomala ms citrina ms clarkei(turpentine bush) decipiens drummondii
Acacia Acacia Acacia	Acacia Acacia Acacia Acacia Acacia	Acacia Acacia Acacia Acacia Acacia	Acacia Acacia Acacia Acacia Ficus Ficus Eremophila Eremophila Eremophila Eremophila Eremophila
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subspecies	var. latrobei subsp. oppositifolia subsp.maisonneuvei	subsp. deserticola subsp. sublucida subsp.kingsmillii
Species	exilifolia foliosissima foliosissima forrestii fraseri gilesii hughesii latrobei oppositifolia ostrina ms platythamnos punctata sp nov. purple maisonneuvei (Syn. Thryptomene)	carmata praecipua deserticola lucasii(Barlee box) opaca camaldulensis eremicola gamophylla gypsophila kingsmillii oldfieldii rameliana trivalvis lasiandra
Genus	Eremophila Aluta	Calytrix Calytrix Corymbia Corymbia Corymbia Eucalyptus Eucalyptus Eucalyptus Eucalyptus Eucalyptus Eucalyptus Eucalyptus
Family	Myoporaceae	Myrtaceae

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wittweri cunninghamii arthropoda grahamii aff tenuiflora grandiflorum (wallflower poison)	canescens polyzygum georgei monophylla forrestii prorepens chambersii rhagodioides	pedunculata sp.(on loan) angustifolium ms contorta(wind grass) sp.(on loan) spicatus(spike grass) caerulescens (limestone grass)	cumingii desertorum dielsii(love grass) eriocarpa(wooll butt grass) eriopoda falcata(sickle lovegrass)
Thryptomene Crotalaria Daviesia Daviesia Galactia Gastrolobium	Glycine Gompholobium Indigofera Indigofera Isotropis Kennedia Leptosema Mirbelia	Swainsona Swainsona Swainsona Pittosporum Aristida Dicanthium Elytrophorus Enneapogon	Eragrostis Eragrostis Eragrostis Eragrostis Eragrostis Eragrostis
Myrtaceae Papilionaceae Papilionaceae Papilionaceae Papilionaceae	Papilionaceae Papilionaceae Papilionaceae Papilionaceae Papilionaceae Papilionaceae Papilionaceae	Papillonaceae Papillonaceae Pittosporaceae Poaceae Poaceae Poaceae	Poaceae Poaceae Poaceae Poaceae Poaceae

Family	Genus	Species subspecies	Location	Collection	Status
Poaceae	Eragrostis	lanipes		Sr	
roaceae	Elagiostis	drooping lovegrass)		2,3	
Poaceae	Eriachne	aristidea(false			
		wanderriegrass)	7		
Poaceae	Erjachne Eulalia	pulchella anrea(silky	2		
Jaccac	Ediana	browntop)	3		
Poaceae	Eulalia	fulva	3	Sr	
Poaceae	Monachather	paradoxa			
		(bandicoot grass)		Sr	
Poaceae	Neurachne	minor	2		
Poaceae	Paractaenum	novae-hollandiae	4		
Poaceae	Paractaenum	refractum	3		
	Sporobolus	indicus	3		
Poaceae	Themeda	triandra(kangaroo			
		grass)	2		
Poaceae	Thyridolepis	mitchelliana(window			
		mulga grass)	2		
Poaceae	Triodia	basedowii(hard			
		spinifex)	2,3		
Poaceae	Tripogon	loliitormis(tive	c		
		minute grass)	7		
Polygalaceae	Comesperma	viscidulum	2		P2
Portulacaceae	Calandrinia	eremaea	2,6		
Portulacaceae	Calandrinia	granulifera	3		
Portulacaceae	Calandrinia	polyandra		Sr	
Portulacaceae	Calandrinia	ptychosperma	3		
Portulacaceae	Calandrinia	stagnensis	2		
Proteaceae	Grevillea	deflexa	2		
Proteaceae	Grevillea	eriostachya	3		

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subsp. juncifolia subsp. aprica S. 68)	des n gg) n od)	a .) Pituri)	subsp. rosulata m snow
juncifolia leucoptera spinosa stenobotrya wickhamii lorea rhombales rupestris sp. Desert(A.S. George 11968)	latifolia(Syn. Canthium) tilaeacea leptomerioides acuminatum (quandong) lanceolatum spicatum (sandalwood)	angustissima petiolaris viscosa ?muelleri sp. C(Flora Cent.Aust.) viscosa hopwoodii(Pituri)	benthamiana rosulata centrale lasiophyllum racemigera(snow flower)
Grevillea Grevillea Grevillea Grevillea Grevillea Hakea Pomax	Psydrax Synaptantha Anthobolus Santalum Santalum Santalum	Dodonaea Dodonaea Dodonaea Peplidium Peplidium Stemodia Duboisia	Nicotiana Nicotiana Solanum Solanum Macgregoria
Proteaceae Proteaceae Proteaceae Proteaceae Proteaceae Proteaceae Rubiaceae	Rubiaceae Rubiaceae Santalaceae Santalaceae Santalaceae	Sapindaceae Sapindaceae Sapindaceae Scrophulariaceae Scrophulariaceae	Solanaceae Solanaceae Solanaceae Solanaceae Stackhousiaceae

Family	Genus	Species	subspecies	Location	Collection	Status
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Stackhousiaceae	Stackhousia	intermedia		_ \		
Stackhousiaceae	Stackhousia	megaloptera		٠	C	
Sterculiaceae	Brachychiton	gregorii			S	
Sterculiaceae	Keraudrenia	integrifolia				
Sterculiaceae	Rulingia	sp.		5	(
Stylidiaceae	Levenhookia	chippendalei		9	รั	
Stylidiaceae	Stylidium	desertorum		5		
Stylidiaceae	Stylidium	humphreysii		٠ <u>٠</u>		
Stylidiaceae	Stylidium	inaequipetalum		3	C	
Thymelaeaceae	Pimelea	ammocharis			Sr	ā
Tremandraceae	Tetratheca	chapmanii		.0	(<u></u>
Verbenaceae	Clerodendrum	floribundum			S	
Violaceae	Hybanthus	aurantiacus		3	C	
Xanthorrhoeaceae	Xanthorrhoea	thorntonii			ડેં	
Zygophyllaceae	Tribulus	platypterus			. જ	
Zygophyllaceae	Tribulus	superosus			I	
Zygophyllaceae		aurantiacum		· 0·		
Zygophyllaceae		idiocarpum		_	,	
Zygophyllaceae		ovatum		•	אַ	
Zygophyllaceae	Zygophyllum	sb.		9		